

# **”YOU CANNOT MANAGE WHAT YOU DO NOT MEASURE”**

An evaluation tool for transition  
processes

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## Executive summary

Although the body of literature on transitions has expanded rapidly throughout the last few years, research on the evaluation of transition processes is still scarce. This can be explained by the nature of transition programmes, which are inherently long-term, uncertain and difficult to steer. However, several government initiatives have emerged in Flanders, trying to initiate a transition toward sustainability, for example in the mobility system and the housing and building system. The question therefore remains how to evaluate a long-term transition programme on a short-term basis. By combining transition literature, evaluation literature and empirical testing, we developed a six-step evaluation tool that tries to make a transitions perspective usable and actionable for non-transition scholars. The Sustainability Transitions Evaluation Tool (STET) combines methodologies and insights from the fields of process evaluation and product evaluation. This paper should be seen as a manual, and is aimed at transition managers or other actors involved in the transition who wish to make a short-term evaluation.

# Introduction

Sustainability transitions and transitions programmes are inherently long-term and multi-dimensional, and often include long-term policy goals offering guidance (Markard, Raven, & Truffer, 2012). Governmental actors have acted upon this need for long-term guidance, and throughout the years, several transition programmes have been initiated by governments around the world. This is also the case for Flanders, e.g. by the development of Flanders in Action (Paredis & Block, 2013). However, the question remains how transition programmes, which are created with a long-term vision, can be evaluated on a short-term basis. This need exists because of the possibility for changes in the programme, in order to achieve a regime change in the long run. In addition, transition research has expanded rapidly throughout the years, but academic research on the evaluation of ongoing transition programmes is lacking (Creten, Happaerts, & Bachus, 2014). In order to cope with this need for evaluation and learning of transitions, the [Policy Research Centre Transitions for Sustainable Development](#) funded a research line on the learning and evaluation in the context of transition programmes (Bussels, Happaerts, & Bruyninckx, 2013; Bussels & Happaerts, 2014). The evaluation tool in this research paper forms the outcome of this programme.

This paper builds further on the work of Creten et al. (2014), who designed a preliminary [evaluation tool](#) for transition programmes, combining evaluation literature and transitions literature. The tool consisted of six evaluation steps corresponding with elements of transition programmes and regime change, e.g. by looking at the creation of a long-term vision, the development of a transition arena and by looking at signs of regime change (Creten et al., 2014). We further developed the **Sustainability Transitions Evaluation Tool (STET)**, by testing and improving it, and by further defining and aligning the evaluation questions, and the logical steps to follow during the evaluation. The **aim** of the tool is to make a short-term evaluation of long-term transition programmes. In doing so, it tries to make a transitions perspective usable and actionable for non-transition scholars. This paper can be regarded as a manual for evaluators wishing to evaluate a transition programme.

For accurate use of the transition evaluation tool, the following remarks need to be taken into account:

- The tool as such does not explicitly refer to the large literature body of transitions research. Theories on transitions and evaluation form the basis for the tool, but they are addressed in the 2014 paper of Creten et al., who explain the theoretical background to the tool as a whole and for each of its consecutive steps. Readers who are interested in the full theoretical background of the STET are invited to read our [previous research paper](#).
- The evaluation tool is primarily meant for evaluation by transition managers or other actors involved in or close to the transition programme. If the transition manager wishes to do a more scientifically rigorous evaluation, we advise to call upon an external evaluator. The tool touches upon a number of important (basic) evaluation methods, but if a more thorough analysis is needed (without the potential bias caused by an internal evaluation), external evaluation is advised for.
- The tool is mainly designed for the evaluation of government-steered transition programmes, rather than for the evaluation of societal transitions as a whole. This choice is made for two reasons. First, our commissioner, the Flemish government, was particularly keen on seeing the

development of a tool they could use in their ongoing and future transition governance processes. Secondly, evaluation a transition as a whole is much more comprehensive exercise involving all the landscape elements, all the regime elements and all the niches. The development of indicators and the evaluation of the causal links is of such complexity, that a multi-year research project involving different disciplines would be required.

- The tool can be applied by digging into the evaluation questions with an in-depth or a more superficial approach. In our paper, we present two options: an ‘application *light*’ and an ‘application *in-depth*’. We will refer to those two options as ‘*STET light*’ and ‘*STET deep*’.

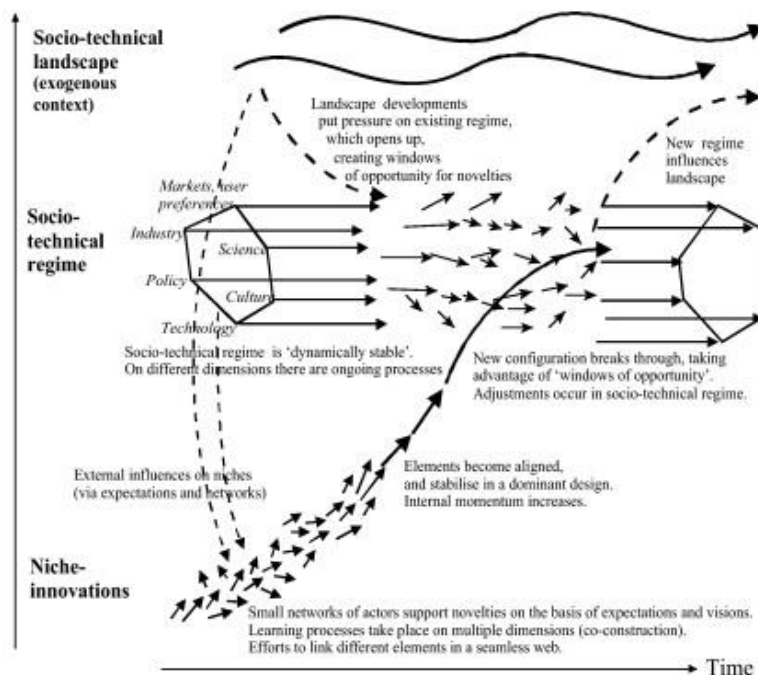
The evaluation tool manual is structured as followed. First, an overview will be given of the most important transitions concepts and their relevance for the evaluation of transition programmes. Secondly, a schematic overview of the evaluation tool is provided. Third, we give an overview of each step of the tool, completed with evaluation questions and guidance on how to answer them. Finally, conclusions and ways forward are formulated.

## 1. What are sustainability transitions?

In this chapter, we give a short overview of the most important concepts of transitions thinking which are relevant for the evaluation tool. Starting off, we can see that the concept of sustainability transitions refers to the fundamental, radical and deep changes in modes of production and consumption in order to overcome persistent problems such as climate change (Happaerts, 2015). Sustainability transitions can be defined as “long-term, multi-dimensional and fundamental transformation processes through which established socio-technical systems shift to more sustainable modes for production and consumption” (Markard et al., 2012; Markard et al., 2012). Now, we will define the most important dimension of transitions thinking for the application of the tool.

A first important element within transitions thinking are the dynamics between the regime, niches and the landscape, as operationalized within the multi-level perspective on transitions. Socio-technical regimes are dynamically stable, which means that they do leave room for adaptation towards new situations, but their inner core will stay intact (Paredis 2011). However, the regime can change because of two elements: exogenous landscape elements, which are outside of the regime but (can) have an influence on its functioning, and niche-innovations (i.e. small networks of frontrunners who develop alternatives to the regime, in order to overcome the so-called persistent problems that remain (Geels & Loorbach, 2007). Transitions can occur when landscape developments (such as a scarcity of raw materials) and niche developments (new technologies, businesses or other societal initiatives) put pressure on the existing dominant regime. This opens a so-called window of opportunity, which allows for a new or altered system/regime to take the place of the previous regime. The goal of the transition programme is to foster the creation of this window of opportunity, by stimulating niches and by actively destabilizing the current unsustainable socio-technical regime. This transition could happen both gradually (by transforming the current regime towards sustainability), but could also occur radically, where the new system/regime completely replaces the old one.

Increasing structuration  
of activities in local practices

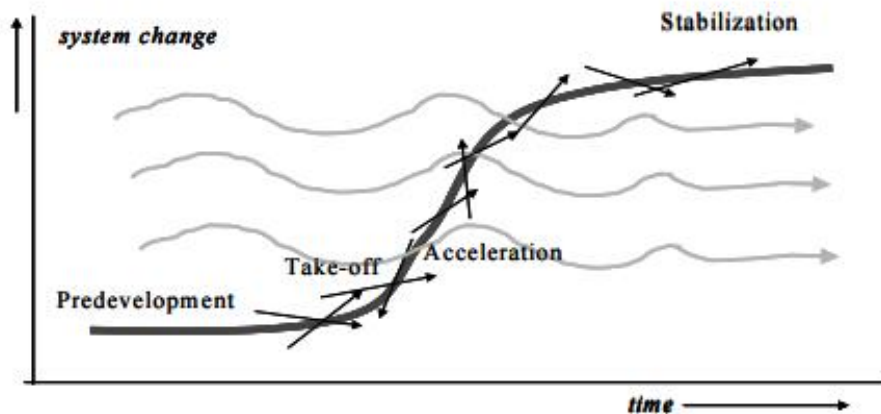


**Figure 1: Multi-Level Perspective** (taken from Geels 2011)

Another – and adjacent- characterization of transition policies can be found in the so-called S-curve of transitions, which characterizes the process of transitions. According to that model, the transition consists of four main phases (adapted from Loorbach & Rotmans 2006):

- The pre-development phase, where experimentation is happening in the niches
- The take-off phase, where change is starting to show and the system slowly starts to shift
- The acceleration phase: where the changes become more visible
- The stabilisation phase: where the changes slow down and a new equilibrium in the regime is reached





**Figure 2:** S-curve of transitions (taken from Loorbach & Rotmans 2006)

Most transition programmes try to foster the transition from the pre-development phase to the acceleration phase. As sustainability transitions are inherently long-term, we do not expect short-term transition programmes to lead already to an acceleration in the transition. This is why we assume that the evaluation will in most cases focus on the take-off phase or just before.

Additionally, experiments, niche stimulation, nurturing and empowerment are crucial in a successful transition programme. The idea of niches is that they foresee so-called “protective space” for new innovations to be developed, which shields the new innovation against current regime practices (Smith 2012). Practical examples of ways to organize this are test gardens or living labs.<sup>1</sup> Furthermore, the transitions management approach stresses the importance of the process elements of the transition process, e.g. by including a focus on the participation of stakeholders and the inclusion of frontrunners (Loorbach & Rotmans 2006). This includes the importance of reflexive<sup>2</sup> learning as a way to self-evaluate and steer the transition programme (Bussels et al. 2013). This is why the tool especially includes these process elements as central in sustainability transitions.

Finally, the tool is also built on three elements of evaluations literature, which have been defined in the previous version of the evaluation tool. Three main challenges are defined in the set-up and execution of transition programmes: an *application deficit*, in case the transitions literature was not applied correctly to a certain policy sphere, an *implementation deficit*, when the application to the policy sphere was correct but the instrument choice was inaccurate, and a *program theory failure*, if the transitions theory proved to be incorrect (Creten et al., 2014) .

<sup>1</sup> For example [Ghent Living Lab](#).

<sup>2</sup> A reflexive approach to governance refers to the idea that not one truth exists, that problems are multi-dimensional and that solutions to these problems might be subject to change (Voss & Bornemann 2006). Reflexive learning refers to the idea that transition programmes learn from their experiences and constantly adapt to these changing interpretations.

## 2. Overview of the evaluation tool

In the table below, the evaluation tool is described in the following six steps:

Evaluation step	Evaluation criteria	Evaluation method
1	Internal program consistency and coherency	<p>Evaluation questions:</p> <ol style="list-style-type: none"> <li>1. What are the long-term policy objectives of the transition program?</li> <li>2. What are the chosen niches in the transition program?</li> <li>3. Are regime destabilizing measures included in the transition program?</li> <li>4. What is the potential impact of the chosen niches and the destabilizing measures and are those consistent the long-term policy objectives of the program?</li> <li>5. Are the niches and the policy objectives coherent in: <ol style="list-style-type: none"> <li>a. The respective policy domain (internal coherence)</li> <li>b. With regard to other policy domains (external coherence)</li> <li>c. Over time (temporal coherence)</li> </ol> </li> </ol>
2	Crucial process activities	<p>Evaluation checklist</p> <ul style="list-style-type: none"> <li>- Setup of a transition 'arena' for a specific socio-technical system</li> <li>- Development of a long-term vision on the system within the arena</li> <li>- A multi-actor, multi-level and multi-domain approach is chosen, but with a single point of coordination</li> <li>- Setup of learning moments and build-in reflexivity in the programme</li> </ul>
3	Crucial policy activities: WHAT	<p>Evaluation questions:</p> <ol style="list-style-type: none"> <li>1. Which policy activities have been defined in the context of the transition programme?</li> <li>2. Do the policies sufficiently stimulate the niches?</li> </ol>

		<p>3. Is the regime sufficiently challenged by:</p> <ol style="list-style-type: none"> <li>Levelling and turning the playing field</li> <li>Shifting of public resources</li> <li>Avoidance of regime reinforcement</li> </ol>
4	Policy instruments implementation: HOW	<p>Evaluation questions:</p> <ol style="list-style-type: none"> <li>Which policy instruments have been designed and operationalized?</li> <li>What is the “spirit” or the aim of the policy instrument?</li> <li>What are the essential elements for good implementation?</li> <li>Are those elements present? If not, where lays the problem?</li> </ol>
5	Decreasing regime resistance?	<p>Indicators for transition program:</p> <ul style="list-style-type: none"> <li>- Powerful actors have embraced the niches</li> <li>- Niche players are becoming powerful actors</li> <li>- Increasing market share for the niches</li> <li>- Increasing efficiency (performance-price ratio) of the niches</li> <li>- Decreasing complexity of the niches for end users</li> <li>- Emergence of network organizations for the niches</li> <li>- Increasing public support</li> </ul> <p>Indicators for the niches:</p> <ul style="list-style-type: none"> <li>- Did niches increase their potential to break through?</li> <li>- Which landscape elements are relevant for the transition?</li> </ul>
6	Causality assessment	Reconstruction of causal chains by using a simplified version of the Modus Narrandi method

## 3. Step-wise application of the evaluation tool

### 3.1 Step 1: Internal programme consistency

#### 3.1.1 Why should I evaluate this?

The evaluation step on internal program consistency is one of the most important steps in the application of the tool: as we assume that the evaluation of the transition programme will only take place while the transition programme is only in its first stages, and the transition has not yet taken off, the analysis of the conception of the programme and different components needs to be extensive. The evaluation of this step will define the further application of the tool: if the internal programme consistency is incomplete or non-existent, it will be difficult to further analyse the policy activities and implementation. Therefore, if the first evaluation step shows that long-term policy objectives and niches are not consistent and coherent, it is not advisable to continue the evaluation.

As Creten et al. (2014) showed, a transition programme should contain at least three elements:

- an analysis of the current unsustainability should lead to long-term policy objectives to which the system should transform,
- niches should be stimulated and
- the current unsustainable regime should be actively discouraged.

These three elements will be operationalized in the evaluation questions. However, the stimulation of the niches and the discouragement of the dominant regime should not be seen as two static options, but rather as the two extremes in a continuum of regime-niche interactions, allowing for a broad range of possible actions. Furthermore, elements of consistency and policy coherence will also be included in the evaluation step, as the transition programme, its adjacent niches and regime destabilization practices need to be as aligned with each other and other policy practices as much as possible.

The following elements are operationalized in the evaluation questions:

- The dynamics between the long-term policy objectives and the niches
- The balance between niche stimulation and regime destabilization in the conception and development of the transition programme.
- The coherence and consistency of the transition programme: the coherence refers to whether the long-term policy objectives, the niches and the regime destabilizing elements form a logical (and thus coherent) whole internally, whereas consistency looks beyond the transition programme on its own and checks whether this logic whole is also created within the current policy domain, over different policy domains and over time.

#### 3.1.2 Evaluation questions

##### **1. *What are the long-term policy objectives of the transition programme?***

The goal of this question is to list the long-term goals of the programme. Long-term policy objectives should be operationalized as beyond the current policy cycle or legislature. In order to be successful

long-term policy objectives, the following elements should be included in their conception and description:

- The long-term policy objective should make a reference to the identification of so-called persistent problems, thereby including the analysis of the unsustainable elements of the current system of consumption and production;
- The long-term policy objectives should include a systematic perspective towards the problem and the solution, thereby going beyond the mere introduction of new incremental policy measures;
- They should be formulated with a focus on the long-term (beyond 10-15 years).

The **result** of this subquestion should be a list of the policy objectives defined within the programme.

## ***2. What are the chosen niches in the transition programme?***

The second evaluation question that should be answered is whether, and which, niches are developed in the context of the transition programme. This refers to the idea in transitions thinking that transition programmes should include certain experiments or new, innovative projects which are set-up in order to reach the long-term policy objectives. Niches can take the shape of innovative technologies, infrastructure, practices, cultures, business models, financing models, etc.

The **result** of this subquestion is a list of the niches that are present within the transitions programme.

## ***3. Are regime destabilizing measures included in the transition programme?***

The evaluator will determine whether, apart from the stimulation of niches, active regime destabilization is included in the programme. This regime destabilization could take the form of predesigned policy activities which contribute to a level playing field between the niche and the regime, by discouraging elements of the unsustainable regime. A typical example is environmentally related taxes, e.g. a tax of fossil fuel consumption will benefit the business case of renewable energy investments.

The **result** of this question is a list of the regime destabilizing measures included in the programme.

## ***4. What is the potential impact of the chosen niches and the regime destabilizing measures and are those consistent with the long-term policy objectives of the programme?***

The goal of this evaluation question is to assess the consistency of the programme, and to see whether the niches and the regime destabilizing measures do have the potential to reach the long-term policy objectives. This step is needed to check for policy theory failures.

The methods and **sources** that can be used in order to complete the analysis include:

- Scientific literature review: first, a (scientific) literature review allows the evaluator to analyse whether the niches or destabilizing regime measures are actually capable of reaching a long-term goal of a sustainability transition. For example, if phosphorus recycling is identified as a niche in the transition programme, a short literature check can be carried out in order to find the current view of the scientific world regarding the (long-term) potential of phosphorus recycling.

- International benchmarking: international benchmarking can supplement the literature review do other examples of successful transition programmes or niche projects exist which could be exemplary and show the potential of the niches and the regime destabilizing measures?
- Argumentation review: if no scientific arguments or international (successful) examples are present, the evaluator is left with the analysis of the argumentation within the transition programme.
- Expert judgment: in many cases, experts on the identified niches or regime destabilizing measures are member of that particular transition community. The evaluator can easily consult with them about the potential of measure under study. If necessary, and feasible, the same can be done with external experts.

The **result** of this question is an argumentation of the impact of the niches and destabilizing measures and a list of the possible gaps or unsolved problems or barriers within the programme.

**5. Are the niches and the policy objectives coherent in:**

- The respective policy domain (internal coherence)**
- With regard to other policy domains (external coherence)**
- Over time (temporal coherence)**

Finally, after looking at the consistency of the policy programme as such, the evaluator should also take into account policy activities outside the transition programme. It would be detrimental for a transition programme to be executed in a vacuum, without alignment with current policy practices. However, this does not mean that the transition programme should be incremental and build upon other (possibly unsustainable) current policies. The coherence question is answered on three levels:

- Internal coherence: is the transition programme coherent within the respective policy domain?
- External coherence: are there inconsistencies between the transition programme and other policy domains?
- Temporal coherence: do the niches and the regime destabilizing measures have the potential to bring about positive effects on the long run, or will their impact be limited to short-term change? (Huttunen, Kivimaa, & Virkamäki, 2014)

The **result** of this phase could be twofold:

- *STET light*: If the evaluator is short on time, the result will be a yes/no answer for each of the subquestions, including some argumentation.
- *STET deep*: If a more rigorous evaluation is executed, the evaluator should answer the questions by using a continuum<sup>3</sup>. This means that the evaluator should look at *how* coherent the programme is on the three levels, and assess how much (in)coherence the transition programme can take before becoming a marginalized process which does not touch upon other policy measures. If desired, a Likert scale could also be used (e.g. fully coherent – rather coherent – rather incoherent – very incoherent)

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<sup>3</sup> Yes – no and multiple more sophisticated answers in between.

## 3.2 Step 2: Evaluation of the transition process

### 3.2.1 Why should I evaluate this?

The reasons for evaluating the transition process are manifold, and find their roots in the transition *management* approach towards transitions. Within transition management, the focus lies - quite obviously- on how transitions are adequately managed, thus pointing at the process variables. This includes for a focus on the inclusion of multiple actors in and outside of the regime, not only by participation, but by a true co-creation of the programme and the knowledge, and by paying particular attention to reflexivity and learning. These process activities are primarily but not exclusively located within the predevelopment-phase, and define the need for certain crucial elements in the set-up and execution of the transition programme. Although the process activities are mainly formulated at the level of the transition programme as such, we believe that most questions also account for the niches, and can be evaluated on that level as well.

### 3.2.2 Evaluation checklist

The approach in this evaluation step differs from the first one: rather than answering questions, the evaluator should now use the following questions as a checklist for the presence of transition elements in the process of the transition programme. It is important to realize that the check on the evaluation questions should not be interpreted narrowly: they mostly refer to an ideal-type theoretical interpretation of transitions management. However, it is important for the evaluator to be aware of the crucial elements of the transition process, both on the level of the transition programme and in the respective niche projects.

#### 1. Creation of a transition arena

This evaluation checklist refers to the question whether a specific group of actors has been set up in order to steer the transition programme. This transition arena should not only occur in the conception phase of the programme, but should meet regularly throughout the execution of the programme

The **result** of this evaluation is a yes/no answer plus argumentation (*STET light*), or a more detailed evaluation of the multistakeholder interaction (*STET deep*).

#### 2. Development of a long-term vision on the system within the arena

Has the transition arena co-developed the long-term vision and the programme, or was the transition programme predominantly steered by governmental actors without including the input of non-governmental actors and innovators in the transition process? The development of the long-term vision should be accompanied by long-term policy objectives, niches to be stimulated and regime destabilizing elements. All actors in the process agree with the long-term vision.

The **result** of this evaluation question is a yes/no answer plus argumentation (*STET light*), or a more detailed evaluation of the presence of long-term vision elements (*STET deep*).

### 3. A multi-actor, multi-level and multi-domain approach is chosen, but with a single point of coordination

The third evaluation question reflects on the kind of actors that are included in the process: they should be multi-actor (e.g. not only consisting of governmental actors), multi-level (e.g. from different governmental departments, big and small companies) and multi-domain (in reference to the need for external coherence). This means that both regime players and innovators should be involved, from the quadruple helix and beyond (e.g. government, companies, scientists, financial partners and civil society actors). However, one actor should take the initiative and have the lead in the monitoring of the transition programme. This will most likely be a civil servant or the coordinating manager of the transition programme transition manager.

The **result** of this evaluation question is a yes/no answer for the presence of multi-actor, multi-level and multi-domain approach plus argumentation (*STET light*), or a more detailed evaluation of the presence of elements pointing to a multi-actor, multi-level and multi-domain to a certain extent (*STET deep*).

### 4. Setup of learning moments and build-in of reflexivity in the programme

Finally, it is important to include learning and reflexivity in the programme. This means that official and unofficial learning moments are included, where all the actors involved reflect on their actions and results to date, and decide on needed adaptation of the transition programme. This evaluation question could also be used for the niche projects defined within the programme, where learning and reflexivity are equally important.

The **result** of this evaluation question is a list of learning moments in the transition programme.

The **sources** that can be used to answer the evaluation questions can differ between an internal and an external evaluator. The internal evaluator may want to include a document analysis, such as founding documents of the arena, long-term vision statements, participant lists or minutes of meetings (Creten et al. 2014). If an external evaluator is involved, interviews can complement this document analysis. However, we do believe that interviews with other actors in the arena (especially non-regime actors) is crucial to make this step work. These interviews are preferably conducted by an outsider (e.g. the external evaluator), but we also encourage internal evaluators to conduct interviews or talks with other actors in the process. We remark that an internal evaluation can lead to a bias compared to an evaluator who is not part of the programme.

The **overall result** of evaluation step 2 is an argumentation on the presence of the process conditions by using the four evaluation questions.



### 3.3 Step 3: Policy activities

#### 3.3.1 Why should I evaluate this?

It is important to look beyond the mere description of the policy activities in the context of the transition programme, but also to analyse the timeframe between the conceptualization of the transition programme (which has been analysed in step 1) and the time of evaluation, by looking at what has actually been done. We specifically refer to policy activities, as we operate on the assumption that the actions of private actors will be steered by the policy actions which are undertaken by public actors in the context of the transition programme. However, this does not mean that the activities of the other actors are irrelevant, but they should be seen as complementary. The main idea of this question is to analyse **what** activities have been conducted so far in the context of the transition programme, thus going beyond what has originally been described in the transition programme. The next evaluation step will then look at how the respective elements have been carried out. This means that we will look for the specific **output effects** of the transition programme. Furthermore, we have particular attention for the balance between both niche stimulation and regime destabilization measures in the policy activities, as explained before.

For a list of possible ‘crucial policy activities’ and ‘policy outputs’, see appendix 1. In *STET light* this list may be shorter than in *STET deep*.

#### 3.3.2 Evaluation questions

##### 1. Which policy activities have been defined in the context of the transition programme?

Before the actual analysis of the elements of niche stimulation and regime destabilization, it is important to list all policy activities within the context of the transition programme. This might seem straightforward, but in order to be complete, the evaluator has to take this step. It is advisable for the evaluator to consult other actors in the transition programme in the drafting of this list, to make sure that no activities are missed or if activities that were not endorsed under the transition programme are wrongfully included.

The **result** of this evaluation question is a list of the policies that are defined in the context of the transition programme. In *STET light* this list may be shorter than in *STET deep*.

##### 2. Do the policies sufficiently stimulate the niches?

Niche projects are by definition not the most cost-efficient projects, as they are developed as alternatives to the current regime. Therefore, actively stimulating niches is an important element in a transition programme. This includes the stimulation of R&D for the niches (e.g. by providing research budget for their further development), but could also include other measures, such as political support for the initiatives. This is why the evaluator should ask him/herself the question whether the policies support further niche development

The **result** of this evaluation question is a list of the policy activities that stimulate the niches and an argumentation on the sufficiency of their actions.

3. Are there sufficient regime destabilizing measures, aimed at:
  - a. Levelling and turning the playing field
  - b. Shifting public resources
  - c. Avoiding regime reinforcement

This third evaluation question refers to the idea of regime challenging or regime destabilization, which should be an active component of each transition programme. The evaluator can answer this question in a rather broad way, but is advised to use the three sub-indicators provided. First, the regime should be challenged by the transition programme by an element of levelling and turning the playing field, which means that the unfavourable position of the niches should be actively challenged towards an even position, or by turning the playing field completely in favour of these niches, e.g. by generalizing a number of rules from a specific test garden to the real world. Furthermore, particular attention should be given to the shifting of government resources. As public actors (who are presumably conducting the transition programme) are the ones who have the financial means and power, the transition programme should lead to other investment patterns, e.g. by altering public procurement or by a tax reform. Third, the transition programme should actively try to avoid to endorse any negative regime activities, which Creten et al. (2014) referred to as non-activity. As the previous activities specifically tried to endorse niche activities and destabilize the regime, the transition programme also needs to discontinue some activities that are present in the current unsustainable regime.

The **sources** for his evaluation question are diverse. First of all, it is advisable to look at policy documents and outputs (such as yearly reporting obligations of the parties in the transition programme). This can be complemented with interviews with relevant actors in the field, for the sake of completeness.

The **result** of this evaluation question is a list of regime destabilizing activities included in the transition programme, with an argumentation on their sufficiency.

## 3.4 Step 4: Implementation

### 3.4.1 Why should I evaluate this?

This evaluation questions build further on step 3, by looking at how the policy activities are actually implemented. This means that after the evaluator asks him/herself what has been pursued in the context of the transition programme, he/she now asks **how** the policy activities have been conducted. The reason for the evaluation of this step lies in the discrepancy between the design of the policy instruments that are chosen to implement the policies, and the actual execution of the policies through the instruments. As Creten et al. (2014) have shown, policy implementation by so-called “street level bureaucrats” can be flawed. This could be extended towards all the other relevant actors in the transition process.

This evaluation question can be answered twofold: if the previous steps in the evaluation have shown sufficient transition elements in the programme consistency, policy process and policy activities, the implementation could be done on the level of policy instruments. However, if the evaluator finds serious flaws, the phase of implementation could become obsolete. Then, the implementation and

short evaluation of the niche projects instead could be conducted, on the basis of the same evaluation questions.

### 3.4.2 Evaluation questions

#### 1. Which policy instruments have been designed and operationalized?

Similar to step 3, the evaluator needs to list the policy instruments that have been designed and operationalised. The category of policy instruments may be interpreted rather broadly, as transition programmes can source from different instruments, such as economic ones (e.g. a subsidy or a tax), regulatory measures (e.g. a ban on unsustainable practices) or other incentives. If this question is answered on the level of the niches, one could ask how the niche projects themselves were designed and operationalized.

The **result** of this evaluation question is a list of policy instruments used in the context of the transition programme.

#### 2. What is the aim of the policy instrument?

After the instruments are defined, it is important to realise what the ultimate goals of the policy instruments are. An example of this can be that the goal of a subsidy for roof insulation cars is to make energy renovations cheaper and increase the sales. This question can be answered for the niches as well, by defining what the actual aim of the niche project is.

The **result** of this evaluation question is a completed list with aims.

#### 3. What are the essential design elements for good implementation?

Next, the evaluator develops a list of essential design elements for implementation of each policy instruments. Essential design elements could be diverse, going from sufficient political support, towards the level of the subsidy or the inclusion of possible fines for negative practices. This also accounts for the niche projects, by listing the elements which would make it possible for the niches to be successful.

The **result** of this step is a checklist of implementation conditions and design elements.

#### 4. Are those elements present? If not, what is the problem?

Finally, the evaluator checks whether the essential elements of step 3 are present, and includes a list of possible problems if the elements are not present. This step is similar for an evaluation of the transition programme and for the niche projects.

The **result** of this step is a completed checklist (with yes or no questions) and a list of possible problems when the elements were not present.

## 3.5 Step 5: Regime resistance

### 3.5.1 Why should I evaluate this?

If all the previous questions are sufficiently answered, the question remains whether a successful implementation of the transition programme actually leads to the possible take-off and acceleration of a sustainability transition, as we explained in the conceptual chapter. The evaluator will now ask him or herself whether the regime is already showing signs of becoming destabilized. This is crucially important for the ability of niches to break through and eventually replace the regime. It is important to realize that this evaluation step is more difficult to answer than the previous ones, as we now move to a more conceptual step, as the regime itself can be difficult to envision.

### 3.5.2 Evaluation questions

Because the question whether decreasing regime resistance has taken place largely depends on the positive answers on the previous evaluation questions, this step has been split up into two separate ones.

If the previous evaluation questions have been answered positively, the evaluator can ask him/herself the question whether regime resistance has decreased by e.g. looking at the following indicators. The list of indicators is not exhaustive and is likely to be different for each transition programme:

- Powerful (non-governmental) actors have embraced the niches<sup>4</sup>
- Niche players are becoming powerful actors
- Increasing market share for the niches
- Increasing efficiency (performance price ration) of the niches
- Decreasing complexity of niches for the end users
- Emergence of network organizations for the niches
- Increasing public support

The **result** of this evaluation step is an argumentation on decreasing regime resistance, based on the possible indicators.

If previous evaluation steps have shown that the transition programme has not been well designed and implemented, the question of regime resistance on the basis of the programme could become obsolete. However, this does not mean that nothing can be done. First, the evaluator can decide to focus on the niche projects instead, asking himself the question whether the result of the experiments could lead to a possible decreasing regime resistance in the future. A second option could be to look at the list of indicators, and look at possible indicators of decreasing regime resistance, which happened even in the context of a negative evaluation of the transition programme.

#### 1. Did niches increase their potential to break through?

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<sup>4</sup> The embracing of niches by powerful regime actors should be evaluated with caution. More specifically, the question can be raised whether it is because they have made the switch necessary for the transition, or because they want to 'take over' and slow down the transition? Greenwashing and window dressing may occur. For example, how should we evaluate the fact that Saudi Arabia has become a very important investor in solar energy?

If the transition programme has been insufficient but did include niche projects and stimulation, the evaluator can ask him/herself the question whether the execution of the niche project has supported the eventual goal. E.g. in the case of a niche projects on comprehensive energy renovations, the evaluator can see whether the results of the projects have been positive and thereby contributed to an increase in the number of energy renovations.

The **result** of this question is an analysis of the niche potential, by listing and analysing the positive and detrimental elements which constitute niche breakthrough. In *STET deep* this analysis may be done on a more in-depth level compared to *STET light*.

## 2. Which landscape elements are relevant in the transition?

As we explained in the conceptual part of our study, a transition is likely to happen when landscape pressures (such as climate change or increasing oil prices) coincide with the breakthrough in one or more niche projects. Together with the previous evaluation questions, the evaluator lists the landscape pressures, in order to anticipate to better alignment with the niche projects in the future.

The **result** of this question is a list of the relevant landscape elements for the transition.

## 3.6 Step 6: Causality

The previous evaluation steps have looked at the different components of the transition programme and whether they have shown the potential to foster the sustainability transition. In the fifth evaluation step, the question of decreasing regime resistance looks at the outcome of the transition programme. However, one should ask the question whether the execution of the transition programme is the reason for the elements which are defined under the decreasing regime resistance. This is why it is needed to examine **causality**.

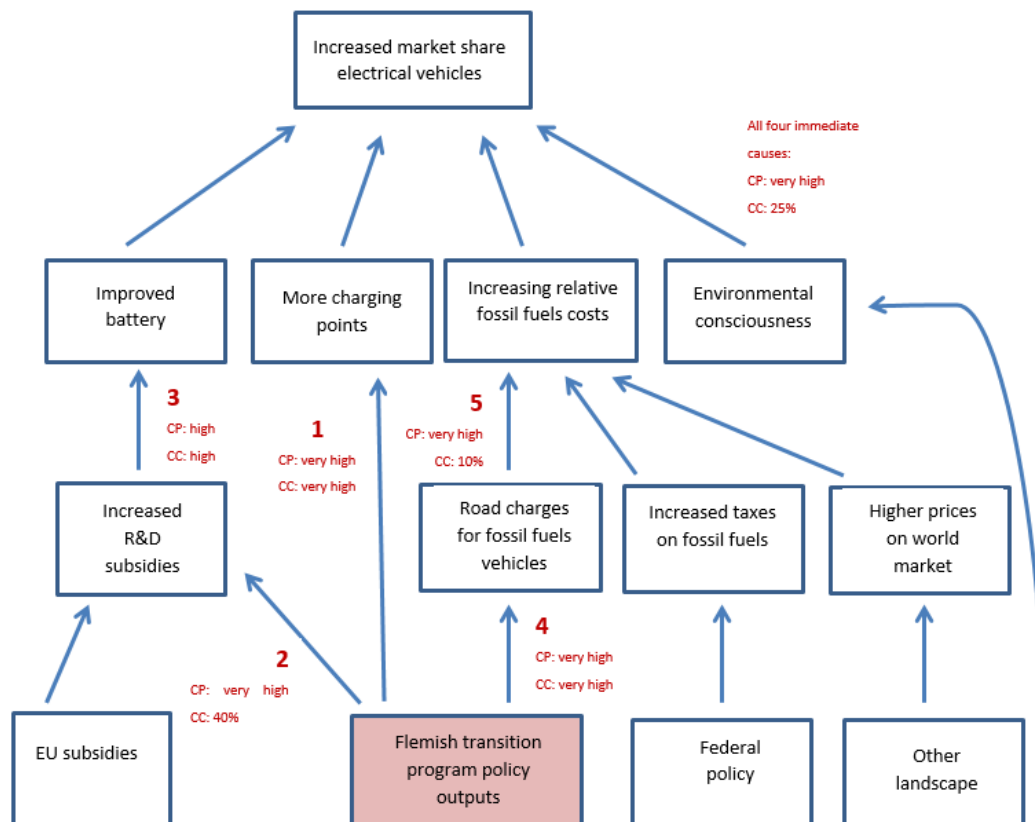
It is important to realize that causality is not defined as “hard” causality, as something like “proving causality” is rarely feasible (Creten et al. 2014). However, we can describe the narrative behind the transition programme and its outcomes. In this evaluation tool, we do so by basing ourselves on the **modus narrandi** method, developed by Gysen et al. in 2006. However, the use of the modus narrandi as an evaluation method requires a methodological analysis of different components and elements of the narrative, which goes beyond the scope of this paper. If the evaluator is interested in making a full analysis, this should be seen as a separate study, preferably by an external evaluator. Additionally, it is important to realise that other elements outside of the transition programme should be included as well, in order to create a more complete picture.

However, this does not mean that it is impossible to use elements of causality. Simply making a ‘**causal map**’ visualizing the relationships between inputs of the transition programmes on the one hand and output and outcomes on the other hand, will already give the evaluator insights on causal links. In doing so, two main concepts are important:

- The **causal contribution**: the causal contribution refers to the idea whether the correlation between element 1 and 2 is strong. This refers to magnitude of the influence of element X on element Y.

- The **causal proximity** questions whether the link between X and Y is strong, or whether other factors might be in place. As the terminology already explains, it refers to ‘how close’ the first step stands to the other one.

The evaluator will make a causal map containing the most important goals, policy activities, output elements and final impacts, including all the logical steps and subsequent causal links. Both the level of causal contribution and causal proximity will be illustrated in the causal map. An (imaginary) example can be found in the figure below:



**Figure 3: example of the modus narrandi (taken from Creten et al. 2014)**

A non-imaginary example of a causal map that has been used in a real policy evaluation study, can be found in appendix 2.

Evaluating causality is the one million dollar question in evaluation science. The results should be treated with caution and modesty. Especially the fact that other factors than the process under study may have had an effect on the outcome. Those factors may be landscape elements (e.g. global economic crises), other policy processes outside of the transition programme (e.g. the general government agreement) and actions of actors outside government, such as business or civil society. However, it is possible to get a generic overview and a coherent set of indications that allow for a general (qualitative) appraisal of the effectiveness of the transition process, as long as it is not explained as ‘facts’ or ‘hard evidence’.

The **result** of this evaluation question should be a figure which defines all possible inputs, outputs and outcomes related to the transition programme, completed with a relative weight of the causal proximity and the causal contribution.

## 4. Utilization of the evaluation results

Carrying out an evaluation is one thing, learning from it is another. It is important that the results of the evaluation are discussed with a group of people involved in the transition process. The discussion will lead to proposals for adjustments in the process, which will make the transition process more successful. We advise to plan this step in advance, to avoid a situation where a lack of time leads to evaluation results 'ending up in a drawer' and never seeing the light of day.

## 5. Conclusions

In this paper, we presented a new evaluation tool (STET) that aims to evaluate long-term transition programmes on a short-term basis. This paper is designed as a manual for an evaluator of a transition programme, who can be involved in the programme or an external evaluator. After the development of a theoretical tool in 2014 by Creten et al., we now present an updated and tested tool, ready to be applied to a Flemish or other transition programme.

The tool contains elements of both process evaluation and impact evaluation, and consists of six evaluation steps with adjacent evaluation questions, indicators or checklists:

- Internal program consistency
- Process conditions
- Policy activities
- Policy implementation
- Decreasing regime resistance
- Causality assessment

The tool mainly looks at elements of the transition programme, the transition process, the balance between regime destabilization and niche stimulation and a possible way to establish causality by the use of the *modus narrandi* method.

After the explanation of the tool, several remarks need to be made. First, it is important to realise that the tool is not designed to be applied strictly: it should be interpreted in a pragmatic way, which is especially the case for the process conditions coming from an ideal-type interpretation of transitions management. Sometimes, transition programmes can be set up without much attention to the formal steps that the transition management literature puts forward. Yet, such programmes can still have a high ambition level, a long-term focus, regime destabilizing elements etc. Moreover, no two transition programmes are the same, so there is no one-size-fits-all solution for evaluation. Second, more work needs to be done on the practical applicability of the transition tool by transition managers and people

in the field. Although the tool has undergone some first testing, it still remains to be seen how the tool will operate when used by a non-professional evaluator.



# APPENDICES

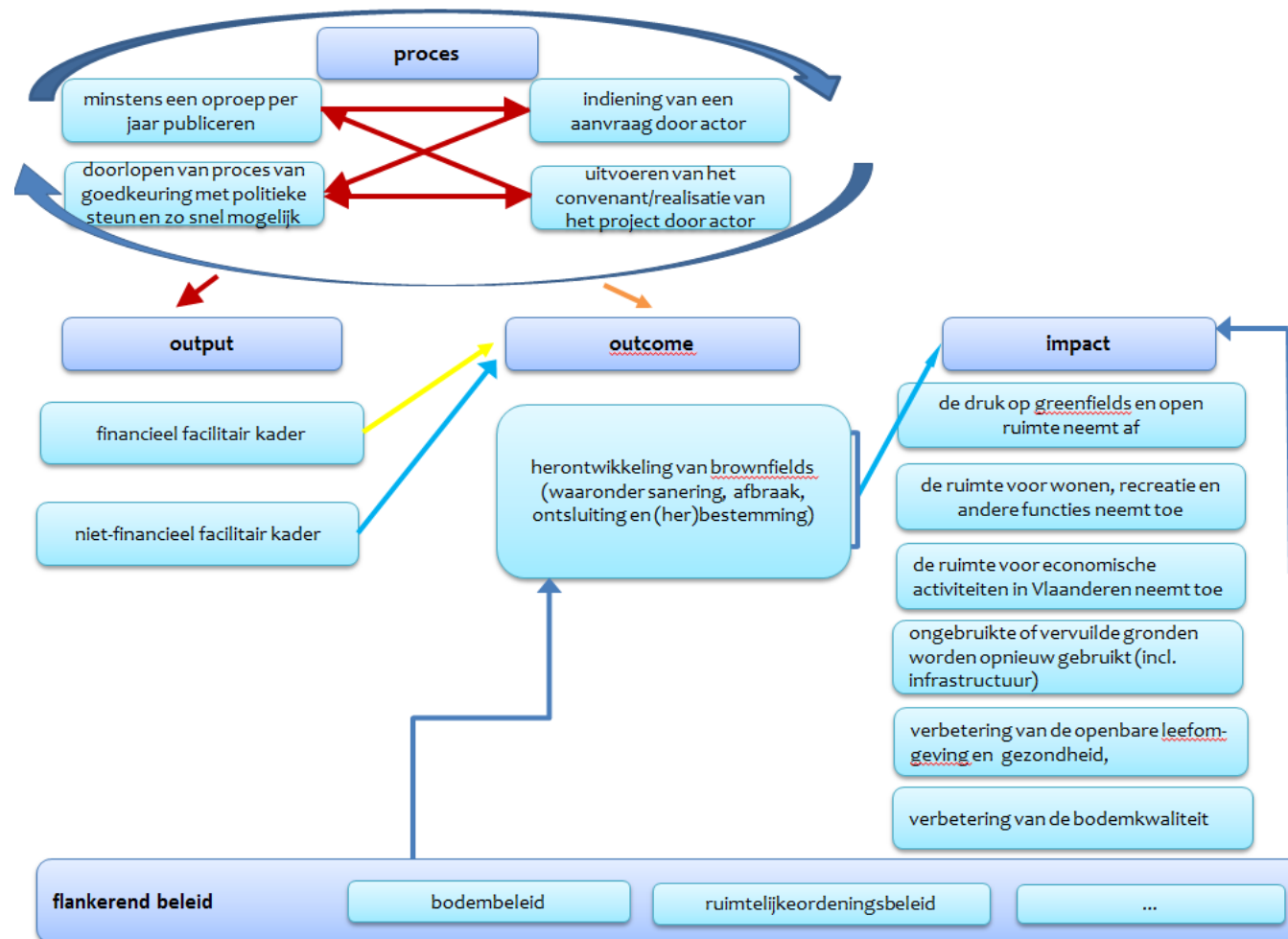
## Appendix 1 : List of possible crucial policy activities and policy outputs

Crucial policy activities	Examples of concrete policy outputs
Stimulating R&D for the chosen niches	<ul style="list-style-type: none"> <li>- The amount of R&amp;D subsidies shifted in favor of the niches and away from regime options</li> <li>- The number of calls launched for R&amp;D proposals on the niches</li> <li>- The extent to which rules and evaluation criteria for R&amp;D proposals are adapted to stimulate research valorization</li> <li>- The amount of subsidies given to private actors for experimentation by setting up test cases of the niches</li> </ul>
Levelling and turning the playing field	<ul style="list-style-type: none"> <li>- The extent to which financial risks are covered for private players who invest in the niches (e.g. amount of loans that not have to be refunded in case of failure of experiments)</li> <li>- The amount of exceptions in regulations created in favor of the niches (e.g. regulation free zones, flexible interpretation of rules for permits)</li> <li>- The amount of taxes shifted away from the niches and towards the unsustainable regime options (e.g. taxes steering certain behavior, lower taxes for producers of niches and higher taxes for producers of unsustainable system options)</li> <li>- The amount of structural subsidies provided for the chosen niches</li> <li>- The amount of harmful subsidies for the regime options that are removed, cut back or reformed</li> <li>- The development of new markets and creation of scarcity where necessary (e.g. CO<sub>2</sub> market)</li> <li>- The increase in information on the niches and the unsustainable regime for relevant actors (labels, information campaigns)</li> <li>- If necessary, the extent to which regulatory power is used making the regime options impossible or highly uninteresting (e.g. EPC rules for buildings, prohibition of pesticides, emission norms).</li> </ul>
Shifting public resources	<ul style="list-style-type: none"> <li>- The amount of public infrastructure adapted in favor of the niches (e.g. adapting the electricity network in favor of renewables).</li> <li>- The actions taken to restrict the use of public infrastructure in favor of the niches (e.g. testing facilities only for sustainable niches).</li> <li>- The total amount of money for which innovative public procurement procedures favoring the niches have been set up.</li> <li>- The amount of investments of public money coming from public investment funds, investments of public enterprise profits, people's loans, etc. that is invested in the niches instead of in regime options.</li> <li>- The extent to which policy agendas are connected and use is made of win-win framings (e.g. make use of concepts such as green jobs, show that emission reductions can decrease costs by lowering the energy use)</li> </ul>

	- The number of changes within the public administration (e.g. introduction of new practices, stimulation of sustainability reflexes among public servants in their work)
Avoid regime reinforcement	- The extent to which any active reinforcement of the existing regime is avoided by not launching new policy initiatives that would stimulate R&D for the regime options, would turn the playing field in favor of the regime or that would shift resources in favor of the regime (e.g. new subsidies, new tax policy or any of the examples mentioned above).

**Source:** taken from Creten et al. (2014), with sources used from (Vanswijgenhoven, 2014; Geels, 2013; Roorda & Bosman, 2014; Ros et al., 2006; Interview with Peter Groot Koerkamp, actor involved in a Dutch transition process on poultry farming, 2014)

## Appendix 2: Example of the application of the Modus Narrandi evaluation methodology



Source: taken from Bachus et al (2015)



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